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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,351	06/23/2003	Harold S. Crafts	000939-052170US	7450
20350	7590	10/06/2004	EXAMINER	
TOWNSEND AND TOWNSEND AND CREW, LLP			HOGANS, DAVID L	
TWO EMBARCADERO CENTER			ART UNIT	
EIGHTH FLOOR			PAPER NUMBER	
SAN FRANCISCO, CA 94111-3834			2813	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/601,351

Applicant(s)

CRAFTS, HAROLD S.

Examiner

David L. Hogans

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-30 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3-29-04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed on July 19, 2004.

Status of Claims

Claims 20-24 and 26-30 are pending. Claims 1-13 and 25 are cancelled. Claims 14-19 are withdrawn.

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on March 29, 2004, is in compliance with the provisions of 37 CFR 1.97, and accordingly, has been considered by the examiner.

Drawings

2. Figures 1-7 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The rejection of Claims 20-30 via 35 USC § 112, first and second paragraphs, has been withdrawn pursuant to Applicant's Amendments and arguments.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 20 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by 5,391,904 to Asami et al.

In reference to Claim 20, Asami et al teaches:

- a logic inverter; (See Figures 6-12 and columns 7-9 lines 60-58)
- a n-channel field effect transistor (23 and 24); (See Figures 6-12 and columns 7-9 lines 60-58)
- a p-channel field effect transistor (21 and 22); (See Figures 6-12 and columns 7-9 lines 60-58)
- a gate (51), formed in a layer of polysilicon; (See Figures 6-12 and columns 7-9 lines 60-58) and
- a connection (52) between a drain (22) of the p-channel field effect transistor and a drain (24) of the n-channel field effect transistor formed in said same layer of polysilicon (See Figures 6-12 and columns 7-9 lines 60-58)

The Examiner notes that connection/gate 52 may connect the drains of the next stage transistor adjacent to gate 51.

In reference to Claim 21, Asami et al. teaches:

- wherein the polysilicon comprising said gate (51) is coplanar with the polysilicon comprising said connection (52) between said drain of the p-channel field effect transistor and said drain of the n-channel field effect transistor (See Figures 6-12 and columns 7-9 lines 60-58)

5. Claims 20 is rejected under 35 U.S.C. 102(e) as being anticipated by 5,342,794 to Wei.

In reference to Claim 20, Wei teaches:

- a logic inverter; (See Figures 1-5 and columns 5-9 lines 20-12)
- a n-channel field effect transistor (112); (See Figures 1-5 and columns 5-9 lines 20-12)
- a p-channel field effect transistor (114); (See Figures 1-5 and columns 5-9 lines 20-12)
- a gate (202), formed in a layer of polysilicon; (See Figures 1-5 and columns 5-9 lines 20-12) and

- a connection (186 and 188) between a drain (320) of the p-channel field effect transistor and a drain (220) of the n-channel field effect transistor formed in said same layer of polysilicon (See Figures 1-5 and columns 5-9 lines 20-12)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over 5,342,794 to Wei in view of 5,286,518 to Cain et al.

Incorporating all argument of Claim 20 and noting that Wei fails to explicitly teach a first layer of metallization and a second layer of metallization, wherein the second layer of metallization comprises no local interconnect.

However, Cain, in Figure 1 and columns 3-5 lines 25-65, teaches a first layer of metallization and a second layer of metallization, wherein the second layer of metallization comprises no local interconnect.

It would have been obvious to one of ordinary skill in the art to modify Wei by incorporating a first layer of metallization and a second layer of metallization, wherein

the second layer of metallization comprises no local interconnect, as taught by Cain, to provide for global interconnections.

8. Claims 24 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over 5,342,794 to Wei in view of 3,808,475 to Buelow et al.

Incorporating all arguments of Claim 20 and noting that Wei fails to explicitly teach a plurality of MACRO's, a first layer of metallization and a second layer of metallization interconnecting said plurality of MACRO's, further comprising no local interconnect in said second layer of metallization in all of said MACRO's.

However, Buelow et al., in Figures 4-13 and columns 3-10 lines 40-65, teaches a plurality of MACRO's, a first layer of metallization and a second layer of metallization interconnecting said plurality of MACRO's, further comprising no local interconnect in said second layer of metallization in all of said MACRO's.

It would have been obvious to one of ordinary skill in the art to modify Wei by incorporating a plurality of MACRO's, a first layer of metallization and a second layer of metallization interconnecting said plurality of MACRO's, further comprising no local interconnect in said second layer of metallization in all of said MACRO's, as taught by Buelow et al., to obtain a lower voltage drop on the ground bus system.

9. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over 5,342,794 to Wei in view of 3,808,475 to Buelow et al. further in view of 5,313,079 to Brasen et al.

Incorporating all arguments of Claims 20 and 24 and noting that Wei and Buelow et al. fail to incorporate wherein at least one of said MACRO's is comprised by a standard cell array with a common row pitch.

However, Brasen et al., in Figures 3-5 and columns 5-10 lines 01-23, teaches wherein at least one of said MACRO's is comprised by a standard cell array with a common row pitch.

It would have been obvious to one of ordinary skill in the art to modify Wei and Buelow et al. by incorporating wherein at least one of said MACRO's is comprised by a standard cell array with a common row pitch, as taught by Brasen et al., to provide flexible routing of routing channels.

Response to Arguments

10. Applicant's arguments with respect to claims 20-24 and 26-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

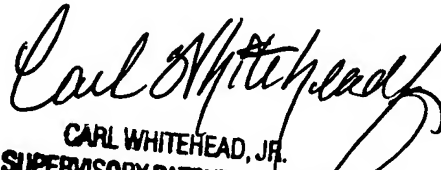
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Hogans whose telephone number is (571) 272-1691. The examiner can normally be reached on M-F (7:30-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DH

OK


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